

CLAIMS

We claim:

1. A system for detecting incoming light from a laser source, comprising:
 - a first array having a plurality of lenses positionable using actuators;
 - a second array having a plurality of opto devices associated with the plurality of positionable lenses, wherein the plurality of opto devices includes at least one light detector; and
 - at least one processor in communication with at least one of the actuators and with at least one of the opto devices.
2. The system of Claim 1, wherein the actuators include at least one comb drive.
3. The system of Claim 1, wherein the plurality of opto devices includes a plurality of photodiodes and a plurality of semiconductor lasers.
4. The system of Claim 3, wherein the ratio of photodiodes to semiconductor lasers is approximately 4 to 1, wherein the first array includes at least approximately 10,000 microlenses, wherein the second array includes at least approximately 10,000 opto devices, wherein the at least one processor is included within a third array having at least 10,000 processors.
5. The system of Claim 4, wherein each microlens is associated with one of the opto devices and one of the processors.

6. The system of Claim 5, wherein the plurality of opto devices includes a plurality of photodiodes and a plurality of semiconductor lasers.
7. A method for detecting a source of an incoming laser, comprising:
 - determining a direction of an incoming laser;
 - determining a wavelength of the incoming laser;
 - determining whether the incoming laser is from a friendly party; and
 - upon determining that the incoming laser is from a friendly-party, providing a friendly-party notification.
8. The method of Claim 7, further comprising:
 - upon determining that the incoming laser is from an enemy, targeting the source of the incoming laser.
9. The method of Claim 7, further comprising:
 - upon determining that the incoming laser is from an enemy, transmitting at least one laser in a plurality of different directions to create a false reflection.
10. The method of Claim 7, wherein determining the direction of the incoming laser includes determining an approximate location of the source.

11. The method of Claim 10, wherein determining the direction of the incoming laser further includes determining a confidence level of the determined approximate location of the source.
12. The method of Claim 7, wherein determining the wavelength of the incoming laser includes utilizing different detectors sensitive to different wavelengths.
13. The method of Claim 7, wherein determining whether the incoming laser is from a friendly party includes examining an optical code carried by the incoming laser.
14. The method of Claim 13, wherein the optical code includes an indication of the pulse repetition frequency of a laser emitter.
15. The method of Claim 13, wherein the optical code is selected from the group consisting of A-Code laser codes (AGM-114K Hellfire missile) and NATO STANAG No. 3733.
16. The method of Claim 8, wherein providing a friendly-party notification includes using a laser to transmit an identification code to the source.
17. The method of Claim 9, wherein targeting the source of the incoming laser includes painting the source with a laser.

18. The method of Claim 10, wherein the at least one laser is part of an array of semiconductor lasers disposed under a corresponding plurality of lenses positionable by actuators controlled by at least one processor.

19. A method for reciprocal targeting of a source of an incoming laser, comprising:
- a. determining a direction of the incoming laser by
 - i. receiving energy from the incoming laser through a plurality of microlenses on a corresponding plurality of opto devices, wherein at least two of the plurality of opto devices are photodiodes,
 - ii. translating each of the plurality of microlenses to a plurality of lens positions,
 - iii. determining the energy detected at the at least two photodiodes for each of the plurality of lens positions, and
 - iv. determining an estimate of the direction;
 - b. identifying an optical code in the incoming laser and determining whether the optical code is associated with at least one of a friendly party and an enemy; and
 - c. upon determining that the incoming laser is not from the friendly party, targeting the source of the incoming laser by transmitting at least one laser toward the source of the incoming laser.

20. The method of Claim 19, wherein targeting the source of the incoming laser includes adjusting a plurality of microlenses overlying semiconductor lasers to focus the at least one laser toward the estimate of the direction.

21. The method of Claim 20, wherein determining the direction and determining whether the optical code is associated with at least one of the friendly party and the enemy are performed by a plurality of processors associated with the plurality of microlenses and the plurality of opto devices.